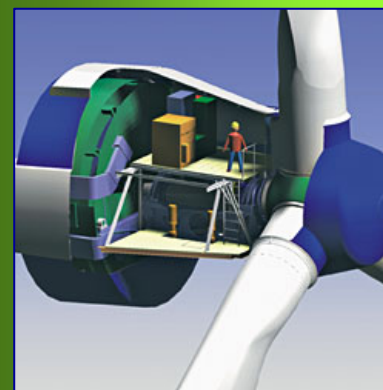
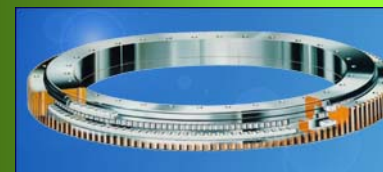

风电齿轮箱润滑油 主要测试与标准

技术支持: 珠海顺益公司



Test requirement summary

测试要求概述

≡ Lubrication tests 润滑性测试

- FZG scuffing load-measures the load carrying ability of the oil (>10 pass)
- FZG刮擦负荷-测量油品的负荷承载能力 (大于10级)
- FZG micropitting test (10 pass)
- FZG 微点蚀测试 (大于10级)
- FAG-INA 4-step test(combined score <2 to pass)
- FAG轴承四步测试 (combined score <2 to pass) 对风电齿轮箱轴承的润滑要求

≡ Corrosion tests 防腐蚀防锈测试

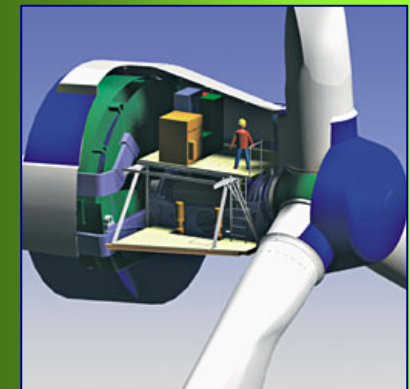
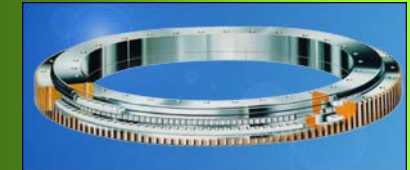
- EMCOR bearing corrosion tests(distilled and sea water) EMCOR 轴承防锈测试 (蒸馏水和海水)
- ASTM D665 procedure A and B 程序A,B
- Copper corrosion 铜腐蚀

≡ Ageing tests 老化测试

- ASTM D2893 oxidation test (<6% Vk 100 change) @95 and 121 C
抗氧化测试
- Shear Stability test 剪切稳定性测试

≡ Paint and seal compatibility 涂料与密封相容性

≡ Foam generation 起泡性



FAG-INA 4-step



Summary result wind turbines - 4 stage test

	criterion	test	result	
Stage 1	wear at boundary lubrication	FE5-800h	1,0	passed
Stage 2	fatigue beh. at mixed friction cond.	FE8-800h	1,0	passed
Stage 3	fatigue behaviour at EHL-cond.	L11-700h	1,0	passed
Stage 4	fatigue behaviour and residues with water added	FE8-WKA	1,0	passed
		summary :	1,0	passed

Oil: Breco SL320

Supplier: Cognis



This evaluation is based on the knowledge derived from a test of one oil batch only. So any scattering or product modification is not considered. A guarantee cannot be given by Schaeffler KG.

This copy is not taken into account by the updating service!

Single results

	result:	1	2	3	4	5	test	result	rating	
stage 1	wear of rollers V50WK	< 10	< 15	< 20	< 30	> 30	yes	1	1	passed
	rippings	no		small	no or wash	no + washer		no	1	
	micro pittings	no			small	strong		no	1	
								stage 1	1,0	
stage 2	running time [hours]	>= 600	-	-	-	< 600	yes	600	1	passed
	wear of rollers V50WK	< 10	< 15	< 20	< 30	> 30		2	1	
								stage 2	1,0	
stage 3	no fatigue damage forced by additives up to L50 [hours]	700	650	600	550	< 550	yes	700	1	passed
stage 4	running time 600 hours	>= 600	-	-	-	< 600	yes	600	1	passed
	filter blocking	no	-	1	-	2		no	1	
	wear of rollers V50WK	< 10	< 15	< 20	< 30	> 30		0	1	
	wear of cage V50KF	< 20	< 40	< 60	< 100	> 100		7	1	
	fatigue damages	no	-	-	-	yes		no	1	
	residues at the bearing	slight	slimod	moderate	modheavy	heavy		slight	1	
	residues at the preheating system	slight	slimod	moderate	modheavy	heavy		slight	1	
								stage 4	1,0	passed

Summary	1,0	passed
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